

Merlin 16+TM Utilities Manual

by Glen Bredon

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Utilities

Typing U at the Main Menu brings up the Merlin Utilities menu, from which a variety of disk utilities are available. This section provides utilities for copying and manipulating files and disk directories. Its main function is to do batch copying, locking, unlocking, and deleting of files from specified directories. Most of the functions are limited to directories containing at most 204 entries, although directories with more than 110 will be displayed with the file names truncated.

A mouse can be used to select options and files. It works a little differently than most mouse interfaces since it "wraps" around the screen. For example, if the cursor is at the top of the screen, then an upward mouse movement will move the cursor to the bottom, as does an up arrow.

Use the mouse button to select options from the main menu or to select or de-select files when a list of files shows on the screen.

Note: These utilities, co-resident with Merlin 16+, are based on "Cat Doctor" from the ProSel disk utility package, also by the author of Merlin 8/16, Glen Bredon. The user interface is far superior, easier to use, and more powerful than the old-fashioned command-line interface. However, for those who insist, command-line based utilities are also possible via the Disk command and Command Box "shell commands". Examples of this method are provided in the COMMAND subdirectory on the Merlin 16+ disk, and include the commands TYPE, DUMP and HELP. The Utilities functions *are not* available as shell commands.

Line input:

In the Main Menu file commands and the Utilities functions, you are often asked to supply a pathname for the file or directory you wish to use. When a pathname is requested, you are shown an existing one. You can accept that name by just pressing Return - you do not have to copy over it.

Throughout, pathnames must be given in their *full* form. However, to make the process easier, certain editing functions have been provided to make entering the pathname a little easier.

The DEL key acts as a delete key should and deletes the character to the *left* of the cursor. The Control-D key deletes the character *under* the cursor. The left- and right-arrows move the cursor. ESCAPE cancels the current function, and returns to the menu. RETURN accepts the line as it stands (or clears to the end-of-line from the cursor, depending on the setting of one of the PARMS bits).

If the cursor is on the first character, then the line is accepted as it stands, but one of the PARMS bits can change this to cancel the operation, as is done in Merlin 8 and Merlin 16. If the Apple key is down while a key is pressed, then that character is *inserted*.

Also, the Control-E key toggles the insert mode for those who prefer things to be as in AppleWorks. A cursor move, or any control character, turns insert mode off. The TAB key moves the cursor just beyond the next "/" or to the end of line.

When asked for a pathname, the mouse button is interpreted as a "?" (when that is available), and gives a list of current volumes or directories. The mouse can be used to move the cursor across a pathname. You could, for example, use the mouse to click on "Catalog" in the Utilities menu, then click again when asked for a pathname. This will bring up a list of all volumes on line. Clicking on one will produce the directory tree, and positioning the cursor on the desired directory and clicking on the tree will produce the catalog of that directory. Move the mouse up and down to scroll the catalog if it is large enough. A final click, anywhere, returns you to the Utilities menu.

Utilities Special Input Features

The program maintains two default pathnames, most often for use in the copying functions for the source and destination directories. If you want to use the alternate default while entering the *first* name, press Control-X (for "eXchange") as the first character of the first default name.

In the Utilities section, there are also additional editing features while entering a pathname.

TAB key: After moving to the end of the current name, the TAB also places a "/" at the end of the line, in anticipation of an addition to the pathname. It does not matter whether a "/" is left at the end of a line or not. The Apple key, together with TAB, moves the cursor to the point just following the *previous* "/", or to the beginning of the line. Use this to move "backwards" through the line. Control-Y truncates the line at the cursor, if you have opted to have the whole line accepted when you press Return.

⌘0-⌘7: Default Prefix. Apple-0 through Apple-7, if pressed on the *first* character of a pathname, will change the default path to the corresponding default prefix (set in the PARMS file) and put the cursor at the end. The CLEAR key clears the line.

? - Tree Search. In some routines you can select the directory pathname by a *tree search* through all directories on a volume. The tree search function examines every directory on the specified disk, and then presents a visual representation of the disk directory structure on the screen. You can then use the arrow keys and Return to select just the directory you want. Try this at least once to see how it works - you'll find it a very powerful feature.

When available, the tree search option is indicated with a message at the top of the screen. The tree search is activated by pressing the ? key as first character of the pathname, or at the first position *after* an existing "/" character in a pathname.

If used as the *first* character of the pathname, then disk devices will be scanned and the volumes online will be displayed for selection for the tree search. If you use the ? *after* the volume name, the device search will not be done, and the tree search will be done from that directory level.

In the tree structured directory display, the mouse button is interpreted as a Return to select the currently displayed directory, and mouse movement is accepted in place of cursor keys.

Option key: Select Device. When indicated, and when the cursor is on the first character during directory name input, pressing the Option (closed-Apple) key will bring up a request for the device number, with the currently logged device as the default. The specified device will then be accessed through the tree search.

When a device is asked for (such as after pressing the Option key) you may also give the device *name* instead (*always* starting with a period). Examples are .DEV1 and .APPLEDISK3.5A under GS/OS, or .D1, etc. under older P16 (but this is pointless under the latter). This is provided to counteract the illogical and hard-to-remember device numbering under GSOS.

Utilities Functions

C - CATALOG

This will display all the files in a given directory. Use the Line Input features described above to select the disk device or subdirectory that you want to catalog. When the list of files is displayed, you can use the up- and down-arrow keys, or the mouse, to scroll the list up and down. The volume name, number of files, and space used on the disk is displayed at the top of the screen. Press the Escape key, or click the mouse button, to return to the Utilities menu.

X- COPY FILES

This is a batch file copier. It retains both create dates and modification dates of files. It is compatible with all types of files including sparse files and subdirectory files.

To use, you first specify the source directory and the destination directory using the Line Input functions. Then a list of the files in the source directory is displayed. Use the cursor keys to highlight the files you want copied and select them (or deselect them) by pressing the space bar. As you press the spacebar for each individual file, a checkmark will be placed by the name indicating it has been marked for copying. If you press the spacebar on a file that is already checked, the checkmark will be removed. You can also press the mouse button to select and deselect files.

You can select/deselect *all* files by pressing Control-A. (Actually, this "toggles" the checkmarks so that previous selections will be deselected and vice-versa.) When ready to copy, press Return. If you decide not to copy any files, press Escape to go back to the Utilities menu.

If "prompting" (in the Utilities menu - see the description of this option later) is OFF, then files will be copied whether or not they exist or are locked on the destination directory. If prompting is ON then you will be prompted if a file of the same name exists on the destination directory, and you will be prompted again if it is locked. During prompting the file name in question will blink. Files that are being copied or that have been copied will show in inverse.

When copying subdirectories, you will be asked if you want the files *inside* the directory to be copied. If you answer "no", the new directory is *created*, rather than copied, if it does not already exist. If prompting is OFF, then the answer to this question will be taken to be *yes*, and all files in the selected directories will be copied.

When the copying is completed you will be asked if you want to copy the same files to another disk with the same directory name. This allows you to copy files to several disks of the same name without going through the process of selection over and over.

Deleting Files After Copying: Once the files have been copied, and you see the "copy same files?" prompt, you can press the Delete key to automatically delete them from the source disk. The files are not actually deleted when you press the Delete key, you will just be sent to the delete function with the files just copied already selected. If you then press Return, the original files will be deleted. (Note: This question is not asked if files inside subdirectories have been copied, because needed data is no longer in memory.)

Copying Only Changed Files: When files have been selected, you can press Control-C (for "changed" files), and the program will automatically copy *only* those files among the selected files whose modification date/time is later than that of the same files on the destination directory, and all files that do not exist on the destination directory. The copying will start immediately without need of pressing the Return key.

Note that if you do not select any files before using Control-C then none will be copied. To copy *all* changed files, use Control-A, then Control-C.

Copying Only Existing Changed Files: As an alternative to the Control-C command, you can press Control-E (for "exists"). This copies only the modified files that *already* exist on the *destination* directory.

Delete Older Files on Source Disk: Another alternative to the Control-C, Control-E, or Return for a standard copy, is to press the Delete key after selecting a group of files. The *source* directory will then be checked for files that are *older* than existing counterparts on the destination disk, and if found, these files are marked, and you are taken to the file Delete

function. That is, if the modification date for a file in the source directory is earlier than the corresponding date in the destination, then you can delete the files. This is provided as any easy way to clean up a disk that has already been backed up.

Note that although this is in the COPY routine, this use of the Delete key does not copy anything. In contrast to the Control-C and Control-E commands, the Delete key does not take immediate action and leaves you in select mode, but remember this is now selection for DELETION.

GS/OS Sessions: File copies, and other things like Delete, now use the "session" provision in GS/OS (when running under GS/OS) to greatly speed up those functions. There is a new Parms bit that, when off, will defeat sessions. This is provided for people who do not want to take the extra risk of messing up their disks, inherent in "sessions" - although it is difficult to say at this time about how serious this danger is. The amount of speedup when copying from hard disk to hard disk appears to be about 50% (twice as fast). On 3.5" disks it is more like 33%.

T - TYPE FILES

This option will "type" text files (or any files) to the screen, that is, it prints the ASCII characters for the selected file(s). You can select any number of files for display. The catalog information for the file is shown just previous to the file display.

Most keys will stop the scrolling display or restart it. The Escape key cancels the display and returns to the Utilities menu. The Return key cancels listing for the current file and proceeds to the next selection, if any. At the end of each file display, the program will stop for a key press before continuing with the next file, or to the Utilities menu in the case of the last file. The S key slows the display.

The left margin and word wrap in the Type function can be defeated by holding down the Apple key when you answer the printer question. You would want to do that with files not formatted with the margin and word wrap features in mind, such as a line-oriented text file.

L, U, D - LOCK, UNLOCK and DELETE FILES

This operates much as does COPY FILES, but only those files that are appropriate to the operation are displayed. That is, for LOCK, only the unlocked files are displayed. If there are one or more directory files in the selected list, you will be prompted *once* as to whether you want to delete directories and their contents. If you respond "Y", all marked directories, and any files and subdirectories within will also be deleted.

Note that deleted directories *cannot* be exhumed, although that can be done fairly easily using Block Warden and Mr. Fixit from the ProSel package.

E - EXHUME FILES

This function lets you revive deleted files, provided the file has not been overwritten. This works **ONLY** on PRODOS 1.4 or later. You should also realize that it is a dangerous operation. Files are most safely exhumed *immediately* after you have deleted them. That is, you should not have written any new data to the disk. If a problem is detected in undeleting a file, then you will get a "file damaged" error message. If you have ProSel, it might be wise to use MR.FIXIT to check for any problems if anything strange happens with this function.

DANGER: You **MUST NOT** use the EXHUME function with files that were deleted under a PRODOS 8 prior to 1.4. The PRODOS file on the Merlin 16 disk is at least version 1.6, so you won't have any problem if you booted with Merlin 16 or the Merlin 16+ disk. Merlin 16+ uses GS/OS, which deletes files correctly. If you are starting up Merlin 16+ on other disks, you should make sure that you have copied ProDOS (from the Merlin 16 disk), or ProDOS 8 (the file P8 in the System folder) from the Merlin 16+ disk to your boot disks if you think you will use the EXHUME function.

You **MUST NOT** use EXHUME on files deleted by older versions (before 7.1) of COPY II+. That program circumvents PRODOS and does not delete files in the same way as do versions of PRODOS 8 after version 1.4. Consequently, it will not work and is dangerous. Conversely, files deleted by anything besides COPY II+ cannot be revived by COPY II+, but can be by the Utilities' EXHUME function.

V - VERIFY FILES

This is used to check for I/O, or other file-reading, problems on a disk, and works by reading specified files to test for bad blocks. If an error occurs then the block will be shown at the bottom of the screen and the program will wait for a keypress. The Return key will continue from this point, TAB will continue from the next selected file, and Escape will abort. Some disk errors on blocks not really inside the file (in the directory, finding the file, for example) may cause errors, aborting the routine. Directory files are not themselves verified, but the files *inside* directories will be verified, if you ask for that to be done (automatic if prompts are off).

R - RENAME FILES

After selection, file names are displayed one at a time at the bottom of the screen, and can be changed from the keyboard. In order to change the VOLUME name, just select some (any) file for renaming and, when presented with that file, use the Delete key to move the cursor back and change the volume name. Press Return when the cursor is at the end of the changed volume name. This will change the volume name and then present the file again with the new volume name. Just press Escape if you don't want to change the file name.

TAB - CHANGE MENU

Pressing the TAB key displays the second menu page of the Utilities section. Notice that some commands on each menu use the same keys. BE CAREFUL when pressing a command key that you choose the function from the correct menu. You can't do any damage by selecting the wrong command, since even a file delete requires additional information to be supplied, but being aware of the different menus will make your life easier.

S - SORT DIRECTORY

This powerful directory sorter asks for a directory name and then displays the names in that directory. Some instructions appear at the bottom of the screen. It accepts the following commands:

- A - sort alphabetically
- C - sort by creation date
- M - sort by modification date
- T - sort by file type
- P - sort by file type and alphabetically within a type

You can also move a filename from one position to another by first highlighting the name, and then using the arrow keys while you hold down the Apple key. You can also use the mouse by holding down the mouse button while you move a selected filename.

When you are done, press Return. (Or press ESCAPE to cancel.) When you press Return you will be given a chance to cancel before the sorted directory is written to disk.

WARNING: If you sort the main directory, be sure to leave the startup ".SYSTEM" file as the first ".SYSTEM" file in the directory. Otherwise, this will no longer be the startup application.

Getting Rid of Problem Files: Sometimes some glitch in the system will ruin a file to the extent that it cannot be deleted by ordinary means. There is a "secret" (meaning not shown on the screen) provision in the Utilities that will allow you to get rid of such files. It is in the SORT routine, even though it has little to do with sorting. If you highlight the *last* file in the list and press Apple-DELETE, then that file will be deleted from the list. Nothing happens on disk until you press Return and ask for the "sorted" directory to be written to disk. To delete a file which is not the last one on the list you must move that file to the end, using the Apple-arrow-keys, and then press Apple-DELETE.

This only gets rid of the file as far as the directory is concerned, and does not free the blocks used by the file and release them to the system. To do that you should then use that provision in MR.FIXIT, a utility which is part of Glen Bredon's PROSEL package.

Please note that files deleted in this fashion are not recoverable. You must use it with extreme caution. Entire directories can be deleted this way, by using it on the name of the directory.

For technical reasons this method does not work on a file that is the only file in its directory. However, the directory containing it can be deleted.

F - CHANGE FILE DATE

This function allows you to change the modification and creation dates on any file - even the volume date (which has a creation date only). You specify the pathname to operate on and you will be shown the existing dates and allowed to modify them. Just press Return to accept the date shown. When you are done you will be given a chance to cancel the function before the new date is written to disk.

The main use for this routine is to allow you to make meaningful creation dates for files having no dates or ones on which the date was ruined by use of dumb utilities like the FILER. You do not have to type the dashes or colon shown in the date, any non-numeric character (such as a space) will do, but you must type the data in the correct position on the screen.

/ - CREATE A DIRECTORY

This allows you to create new subdirectories without leaving the program. It will even create multiple subdirectories. For example, if you tell it to make a directory called /HARD1/DIR1/SUB3 and DIR1 does not exist on /HARD1, then DIR1 will be created and a subdirectory SUB3 created inside it.

N - SHOW VOLUME NAMES

This looks at all mounted disk devices and shows the device number, device name, volume name, and the number of free and total blocks.

B - TOGGLE BELL

If this is OFF then the bell that is heard at some prompts will be defeated.

P - TOGGLE PROMPTING

This toggles the prompting state for the FILE COPY and VERIFY. The current state is shown on the menu. If prompts are OFF then deleting of locked files and copying over existing and locked files is done without asking whether you want to or not. In addition, copying and verifying files inside selected directories is done automatically when prompting is OFF.

M - MOVE FILES

This is like a file copy, but instead *moves* files between directories on the *same* volume. The file appears in the destination directory, and is removed from the source directory. This is very fast and can move whole directories. It does not write new files, but just moves the pointers to the files to the new directory.

D - DUMP FILES

The Dump files function is somewhat like the TYPE command, except that it gives a combination ASCII and hex dump of the selected file(s). It allows scrolling, with the arrow keys or mouse, through the dump. Both Dump and Locate read only the first \$FFBE bytes of the file. This is due to scrolling, etc., which are difficult to implement without some such limit. Note that the DUMP program, in the COMMANDS directory, and which can be invoked from Merlin 16+ as a shell command, does not have this limitation, but it does not have the convenience of the reverse scrolling either. The Apple key can be used together with the up/down arrows to speed the scrolling (going 8 lines at a time instead of just one). The scrolling speed will also increase if the mouse is moved rapidly.

F - FORMAT A DISK

The FORMAT command will re-format the selected disk device, ERASING ANY EXISTING DATA ON THAT DISK! USE WITH CAUTION!

E - ERASE A VOLUME

This will erase all files on the designated volume. It gives you a chance to change your mind before the action is taken. This is like formatting a volume, but is much faster. It is different from a FORMAT in that the disk is not reformatted. Rather, the main directory is just rewritten as an empty directory, and block 0 (the boot block) is rewritten. ERASE can be used on floppies (even ones with extra tracks), Unidisks, hard disks and some /RAM volumes. The /RAM drivers supported are the Checkmate Multiram driver, the AE Ramworks driver, and the /RAM driver supplied on the Prosel disk.

K - COMPARE FILES

The "Kompare" files function is an amazingly powerful utility that will compare any two disk files, and display, in both hex and ASCII, the data in each file, with any differences between the two files highlighted.

Ordinarily, a utility like this is useless after the first byte that is different is found, because all bytes after that point may be "out of sync" which each other, due to an inserted or deleted byte. The Kompare files function allows adjustment of the position of one file with respect to another, which totally avoids this limitation. This function reads only the first \$FF00 bytes from each file and will ignore the tail-end of larger files.

C - COMPARE DIRECTORIES

This will compare the content of two directories (not the *contents* of the files in the directories, only the filenames and dates). A file listed on only one of the two columns is in that directory but not in the other. Files in both directories, but of different file types, are shown with their types, and those with different modification dates are shown with their dates.

L - LOCATE A STRING

The Locate string function will search all the selected files for an ASCII string. Files are selected in the usual way. The string has been found in a given file, it will be highlighted, and you can then press the space bar to find the next occurrence in that file, Return to go on to the next file selected (if any), or Escape to cancel the search.

If the file being searched is a TXT file whose name ends in ".S" (the assumption being that it is then a Merlin source file), you can also go directly to Merlin's full screen editor with the cursor on the line containing the found string. Any file presently in the source buffer will be overwritten if this option is selected; otherwise none of the four text buffers are affected by the LOCATE command, or any other Utilities function except Volume copy. If you want to preserve the text buffer while using the LOCATE function to EDIT another file, you should use one of the SWAP commands in the editor before going to Utilities to use the Locate function.

V - VOLUME COPY

Ordinarily, Volume Copy copies only the used blocks on a disk. If both Option *and* Apple keys are down when the *destination* device is given, then it will copy *all* blocks. If Option *and* Apple keys are down when the *source* device is given, then it will ignore read errors in the directory blocks, but it will assume the volume size is 1600 blocks (a 3.5" disk). These provisions are to aid recovery of damaged disks, and should not be used otherwise.

CONTROL RESET

A control-reset will send you back to Merlin's Main Menu. Although GS/OS documentation says that RESET should never be trapped within an application, Merlin 16+ still provides this feature in the hopes that it may be useful to recover some essential file still in memory in the event of a system lockup. You should never press Control-RESET just as an easy way to cancel an operation, and after pressing Control-RESET, you should immediately save your file to a NEW AND EXPENDABLE disk. The operating state of GS/OS is not guaranteed after Control-RESET, and you should restart your system as soon as it is practical.
